

ART. I.—*On a Viviparous Fish from Hobson's Bay.* By
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IN the beginning of last month (August, 1855) I found in a fishmonger's shop in Melbourne, a small fish, which, on account of its peculiar shape, I deemed worth dissection.

On opening it, in order to examine the contents of the stomach, to my astonishment I found a true womb containing a multitude of young fishes, the offspring of the larger fish.

In the Year Book of Facts for 1855, in an article headed "Extraordinary fishes from California," is a description of two fishes purported to bring forth their young alive, which have been recently forwarded for examination to Professor Agassiz. That eminent naturalist considered them to belong to a new genus, which he proposed to designate by the term *Embiotica*. Further particulars concerning these extraordinary creatures may be seen in the American Journal of "Science and Art," XXI., and in "Jameson's Philosophical Journal," 114; but as I am unable to obtain either of these periodicals here, in offering this description of my Hobson's Bay fish, I must undertake the risk of either repeating something already known or stating not sufficiently clear that which is yet unknown.

The fish I am about to describe lives at the mouth of the Yarra, in shallow water amongst sea plants. It varies from five to six inches in length, and in general is of a greenish brown colour, though somewhat brighter on the belly. The fins, which are light brown, are more or less sprinkled in the course of each ray with markings of dull pink. Eyes greyish, with four to six radii, with the pupil bordered by a fine red line.

The whole body is speckled over with small black dots, and the back, down to the middle of each side, is marked by a series of dark stripes. The fins are four in number, viz.—The dorsal, anal, caudal and pectoral. The dorsal fin contains thirty-nine rays, which, with the exception of the first

three and last four, are all spinous. The anal fin is composed of twenty-six, the caudal of twelve rays. The pectoral fin of the female has thirteen, while that of the male has only twelve rays. These fins are all soft.

Two well-developed beard-like branched excrescences fall from the throat, representing the ventrals, and there are also other thready appendages above the eyes and below the nostrils.

Both jaws contain a large number of minute and sharp teeth.

The scales are so small as to be scarcely visible to the naked eye. When magnified, however, they exhibit the forms shown in the figure (see Fig. g). The fish is, with the exception of the belly and part of the head, completely and uniformly covered by these scales, there being no interruption like that which Agassiz found in the Californian species, a peculiarity on account of which he proposed to call it *Halconoti* if the name "Embiotica" was found to be inappropriate.

The liver (c) covers the stomach, the heart (d) being concealed between them. Slightly attached to the back of the fish, by thin band-like filaments, is the uterus or bag (b), connected with the hinder part of the intestines (a). The womb consists of a very thin and transparent skin, of a faint blueish colour, and, in the specimen which I opened, it contained upwards of two hundred young, in various stages of development, from the simple egg to the perfect fish (*vide* figures 1, 2, 3, 4 and 5). The young, when in the form represented in figures 1, 2, 3, were enveloped in a bag or caul, which contained a fluid. By experiment I found that the young fish in the uterus is born as soon as it has arrived at its greatest perfection; thus allowing room for the further development of the other half-grown creatures in the womb. The young fish at its birth is almost as perfect as its parents, but differs from them in colour, being almost white, and is characterised by the absence of the dorsal and caudal fins. It possesses, notwithstanding, an active power of locomotion, and swims vigorously about in its new element as soon as born. A few days after birth the hitherto wanting fins (which, while in the womb, were indicated by a row of black spots) begin to be perceptible, and the colour of the young fish become considerably darkened. On pressing the abdomen of the old one, ten or fifteen young fishes were squeezed out, which made living motions in the hand, and swam immediately on being placed in sea water; but others

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